Florida Forest Health Highlights 2018

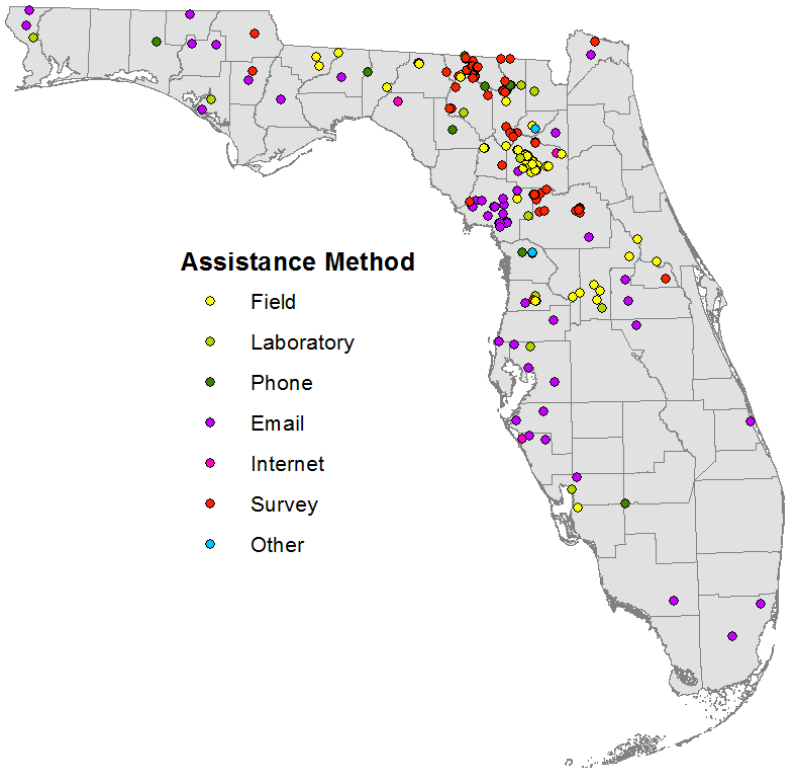
Forests of Florida

Florida's forests are expansive and diverse and include subtropical systems, baldcypress wetlands, pine flatwoods, pine-oak scrubs, gum-cypress swamps, coastal mangroves, isolated hardwood hammocks, and more extensive upland hardwoods. The state's mild climate, tourism industry, and many ports of entry also make it particularly vulnerable to the introduction and spread of non-native invasive species. Challenges to forest health in the Sunshine State are therefore myriad and complex. What follows are only a small sample of notable examples of Florida's forest pest and disease-related activities and scenarios from 2018.

Forest Health Section

The Florida Forest Service's Forest Health Section staff is constantly involved in countless technical assistance requests from a wide variety of recipients. This recipient list includes but is not limited to The International Society of Arboriculture, The University of Florida and the Cooperative Extension Service, The Division of Plant Industry, Florida Forest Service personnel, Forest Industries, the Society of American Foresters, The Florida Forestry Association, Florida A&M University, Private Landowners, and others. The Forest Health Section offered at least 12 presentations and training seminars in Fiscal Year 17/18, to approximately 352 attendees. Florida Forest Service Forest Health Section staff attended the Southern Forest Insect Work Conference, as well as the winter and spring Southern Group of State Forester's Forest Health Committee meetings. The Florida Forest Health Section staff also provided identifications, diagnoses, and management recommendations regarding over 333 forest-health-related incidents statewide (Figure 1). In addition, the FH Section is in the process of developing and revising a number of new and existing publications for public education and outreach regarding forest pests and diseases.

Figure 1. Locations of Forest Health-related assists performed by FFS Forest Health Section Staff, from October 1, 2017 to September 30, 2018.

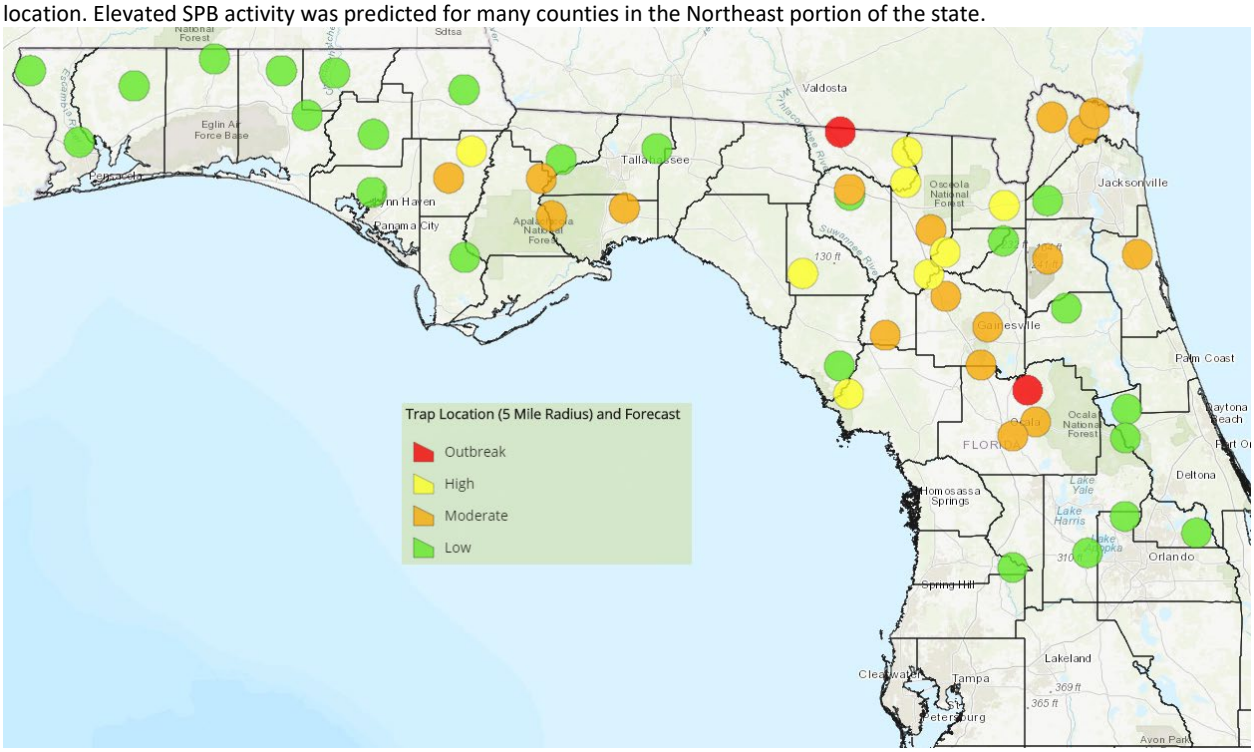


Southern Pine Beetle Spring Pheromone Trapping Survey

The Southern Pine Beetle is one of the most destructive forest pests in the southern United States. Since 1995, the Florida Forest Service has participated in an annual statewide Southern Pine Beetle (*Dendroctonus frontalis*, or SPB) spring trapping survey. This survey monitors numbers of adult SPBs and their clerid predators captured in pheromone-baited flight traps during the SPB primary spring dispersal phase. The results are used as an early-season prediction of SPB population trends and activity levels, allowing forest managers to identify areas of potential SPB activity in advance of aerial detection flights. The survey also provides data for monitoring SPB population levels from year to year.

The annual survey to monitor SPB population levels was conducted from February to March 2018. The survey included 49 traps in 35 counties in North Florida. This survey predicted high or outbreak SPB activity around 14 trapping locations (Figure 2).

Figure 2. 2018 Southern Pine Beetle Infestation Levels at Five Mile Trap Radii. Prediction values range from "Low" to "Outbreak" for each trap location. Elevated SPB activity was predicted for many counties in the Northeast portion of the state.

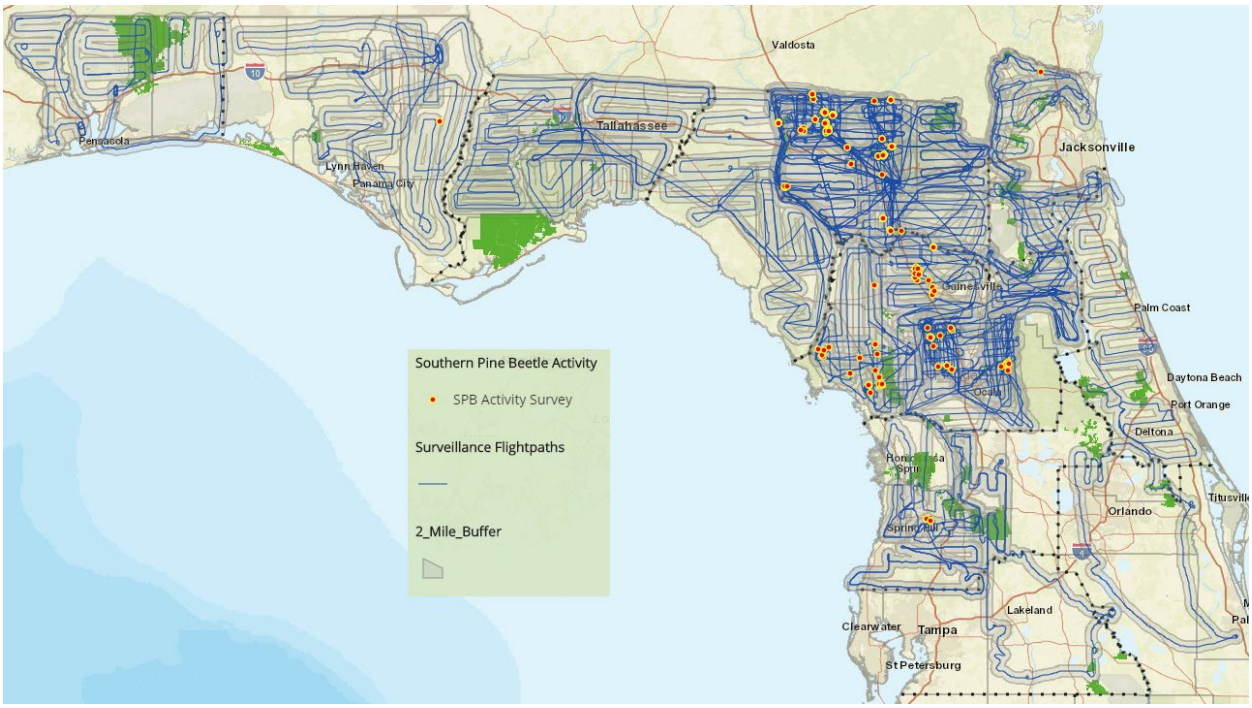


Southern Pine Beetle Surveillance and Activity

The annual aerial survey to detect southern pine beetle (SPB) infestations was conducted over 38 flights in 2018, totaling 8,790 linear miles (to observe an estimated area of 26,370 square miles). This includes some additional flights conducted to re-assess previously-detected SPB activity through the summer.

SPB activity was lower than predicted in most areas in 2018. A total of 172 infestations were detected, totaling at least 401 acres (Figure 3). FFS staff communicated closely with the affected landowners and managers to notify them of infestations and advise them on suppression activities.

Figure 3. Flight paths and estimated survey area covered by the SPB Aerial Survey program in Florida, and locations of SPB infestations detected as of November 8, 2018.



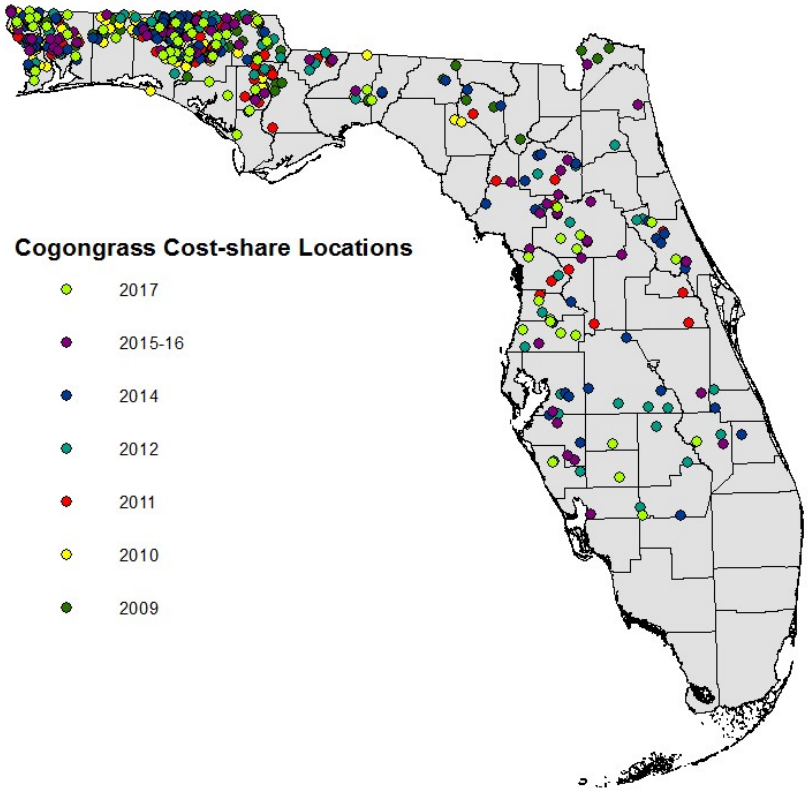
Cogongrass

Cogongrass (*Imperata cylindrica*) is almost universally regarded as one of the most damaging invasive plants in the Southeast. Its rapid and aggressive growth, ease of propagation from rhizomes, tolerance of drought and poor soils, and fire-adapted traits have allowed it to invade into a wide variety of sites in Florida, greatly complicating land management. Once established on a site, cogongrass often requires multiple years of aggressive treatments to eradicate.

A cogongrass infestation in the understory of a pine plantation on private land in Florida.

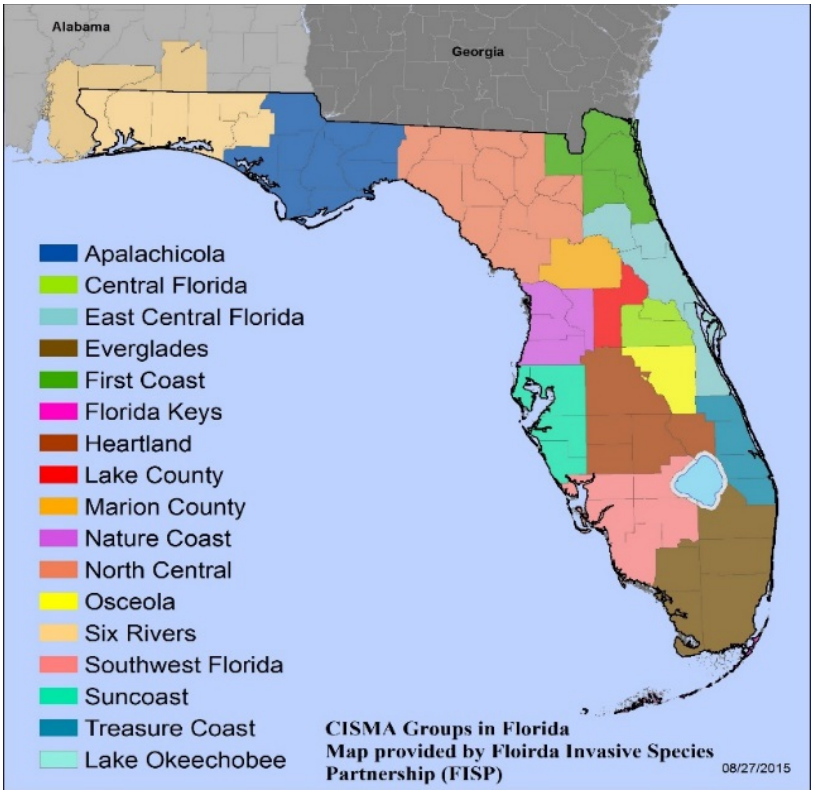
Although public conservation area managers are generally engaged in combating cogongrass, much of Florida's infested area is on private land. In 2009, The Florida Forest Service began offering a cost-share program to non-industrial private landowners, to assist with the cost of treating cogongrass infestations with herbicide.

Cogongrass eradication efforts continue for 2018, funded by a series of multi-state landscape-scale restoration redesign grants from the USDA Forest Service (awarded in 2008, 2011, 2014, 2015, and 2016). Since the program's inception, a total of 580 contracts have been awarded to treat roughly 6,400 acres of cogongrass on private lands in Florida. As no new federal funding has been awarded for the project, no new contracts are currently being enrolled.



Non-native Invasive Plants

Non-native invasive plant species represent a substantial threat to forests and other lands in Florida; they can reduce forest productivity and diversity, degrade the value of the land for wildlife habitat and recreation, and increase the risks and effects of wildfires. As invasive plant problems often cross property boundaries, the Florida Forest Service advocates a partnership approach, cooperating with other public agencies and private land managers to address invasive plant problems across the landscape. This is exemplified by Florida's Cooperative Invasive Species Management Areas (CISMAs), representing voluntary regional partnerships between many public and private stakeholders, with the common goal of reducing the distribution and future spread of invasive species. These groups are supported at the state level by the Florida Invasive Species Partnership.



Invasive Species Treatments

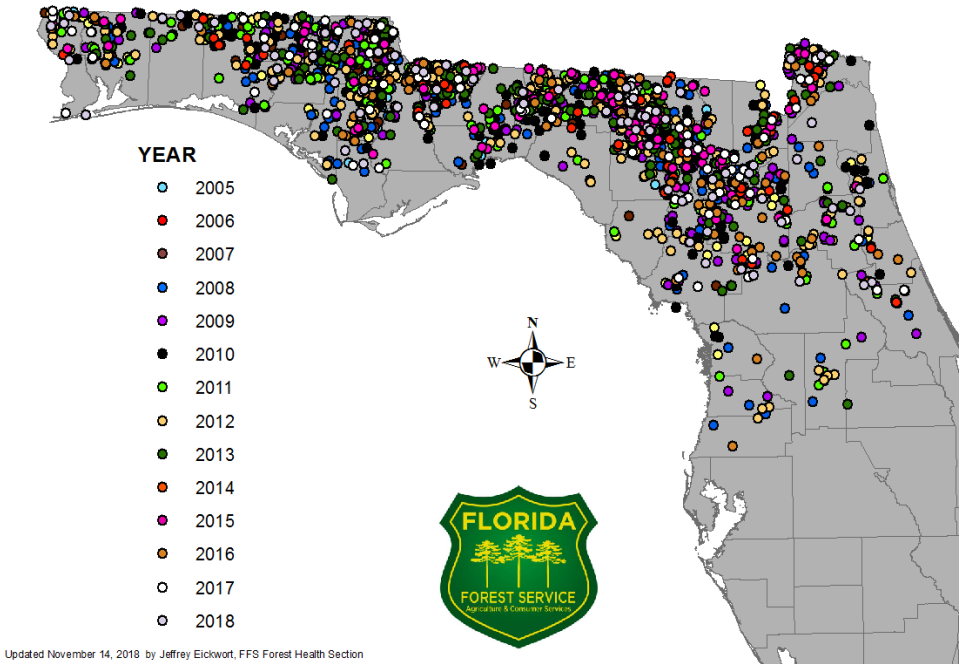
Funding from the Cooperative Forest Health Protection Program is used to support invasive plant survey and suppression efforts on selected State Forest lands. Exotic plant crews treated at least 7,751 acres of invasive plant infestations in Fiscal Year 2017/18. Although cogongrass (*Imperata cylindrica*) and Japanese Climbing Fern (*Lygodium japonicum*) continue to be widespread problems in many state forests, the largest areas treated were for melaleuca (*Melaleuca quinquenervia*) control projects in South Florida. Caesar weed (*Urena lobata*) is increasing recognized as an important target in Central and South Florida, and callery pear (*Pyrus calleryana*) is reaching problematic levels in the western Panhandle region.

Southern Pine Beetle Cost-Share Program

The Florida Southern Pine Beetle Assistance and Prevention Program is designed to provide non-industrial private forest (NIPF) landowners with assistance and incentives to reduce the susceptibility of their pine stands to southern pine beetle. The southern pine beetle is a native and destructive insect pest of pines in the United States. The best way to minimize losses from the SPB is to prevent infestations by reducing stand susceptibility through active forest management. Toward this end, the program offers landowners cost-share or incentive payments for conducting certain approved forest management practices that help prevent and reduce the occurrence of southern pine beetle infestations.

The 2018 sign-up for the program was held May 22 through June 29. Five practices were offered: first pulpwood thinning, prescribed burning, seedling establishment, and mechanical underbrush treatment. Since 2005, over 180,000 acres of pine forest have been treated through the program, with over 7,100 acres more currently under contract for treatment. This program is administered by the Florida Department of Agriculture and Consumer Services Florida Forest Service (FFS) and is funded through grants from the USDA Forest Service.

2005-2018 SPB Prevention Cost-Share Practice Locations in Florida



Fusiform Rust in Juvenile Longleaf Pine

Several cases of unusual decline and mortality in young (2-5 year old) longleaf pine plantations were reported across North Florida in the past year, and ultimately found to be due to infection by the fusiform rust fungus (*Cronartium quercuum* f. sp. *fusiforme*). The identity of the fungus was confirmed using molecular techniques by the FL Division of Plant Industry's Plant Pathology Section.

These infections caused distinctive swollen and cankered galls near the root crown, just below the soil line. This suggests that the initial infections took place while the trees were still in the seedling or "grass" stage (before vertical stem growth began). It also makes diagnosis of the problem more difficult, and it's possible that this problem may be more widespread than is generally known. In cases of unexplained decline/mortality of young longleaf pines, we recommend that the root crowns be excavated, to look for swollen and distorted growth.

Left: Young longleaf pine showing typical decline symptoms. Right: Excavated root system of a young longleaf pine with a fusiform rust infection, showing swollen and distorted growth.

Redheaded Pine Sawfly

Unusually heavy outbreaks of redheaded pine sawfly (*Neodiprion lecontei*) were reported in scattered locations throughout Florida, particularly in the late summer and fall months. The caterpillar-like larvae of this wasp species feed on pine needles, and in heavy cases can almost completely strip the trees bare. In most cases trees can survive and recover from this damage, but late-season outbreaks can cause severe stress and sometimes death, because the trees do not have time to grow more needles before the winter dormant season.

Typically, these outbreaks are controlled naturally, by predators and parasitic insects. Although pine sawflies can be controlled with insecticide sprays, such treatments are most effective if applied when the larvae are young, and they often aren't detected until later. Landowners should watch for signs of infestation in early 2019, to determine whether control treatments are called for to prevent another year of feeding damage.

Left: Redheaded pine sawflies feeding on pine needles. Right: A severely defoliated longleaf stand.

For Further Information, Please Contact:

FFS Forest Health Section Staff:
Jeffrey Eickwort (Supervisor); (352) 395 4689; Jeffrey.Eickwort@FreshFromFlorida.com
Christopher Pearce (Survey Coordinator); (352) 395-4690; Christopher.Pearce@ FreshFromFlorida.com
Anthony Ayers (OPS Forester); (352) 395-4652; Anthony.Ayers@ FreshFromFlorida.com
Christine Matthews (Staff Assistant); (352) 395-4691; Rebecca.Strom@FreshFromFlorida.com

Florida Department of Agriculture and Consumer Services
Florida Forest Service, Forest Health Section
1911 SW 34th St.
Gainesville, FL 32608
Florida Forest Service Forest Health Website

USDA Forest Service
Forest Health Protection, Southern Region (R8)
1720 Peachtree Road, NW
Atlanta, GA 30309
404-347-4095
USDA Forest Service, Region 8 Forest Health Website